PC PLUS★WARE™ NEWS
A PUBLICATION OF STSC, INC.

Summer 1986

# STSC RELEASES TWO NEW PRODUCT UPDATES TO ENHANCE YOUR BUSINESS CAPABILITIES

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SIGNATURE

*Gear up for Fall with STSC! We're kicking off the season with the release of two major product updates—both designed to enhance your productivity and business capabilities. The two new PLUS★WARE product updates are major new versions of the APL★PLUS System for the PC and STATGRAPHICS, both featuring a wealth of new enhancements and capabilities.*

*Take a look at all the new capabilities that each of these products have to offer:*

## STATGRAPHICS, Release 2.0

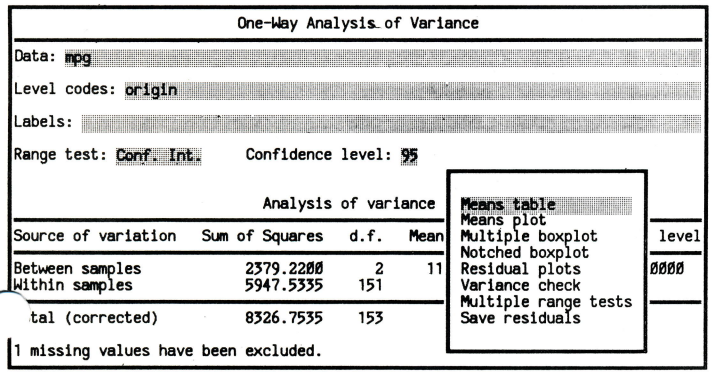
Increased speed and ease-of-use, an enhanced data manager, and new procedures highlight a lengthy list of new features now available in Release 2.0 of STATGRAPHICS.

This new version of STATGRAPHICS features improvements and enhancements to practically every aspect of the product, giving you even more flexibility and power to tackle complex statistical data analysis.

Among the new capabilities you get in Release 2.0 are:

- General speed-ups throughout the system, including faster procedure loading and quicker response time between screens and menus.
- Enhanced data management features, including data directories that are created automatically so you no longer have to read variables into memory.
- Direct import and export facilities for dBASE III and the latest versions of Lotus 1-2-3 and Symphony.
- A VARS function key that provides a pop-up window of files and variables from anywhere in the system.
- Enhanced graphics options that now let you overlay multiple plots on one graph, vary size of titles, and zoom in on a plot.
- New statistical procedures, including Stem-and-Leaf Displays, relative frequency histograms, loglinear analysis, analysis of covariance, and others.

Included in the STATGRAPHICS update package is a complete new set of software, documentation, reference cards, and a new tutorial. The cost to upgrade your STATGRAPHICS system to Release 2.0 is $150 if ordered by September 30. The price increases to $195 after that date.




*Full-Screen data input panels and a pop-up menu of options are examples of operational improvements that have been made in STATGRAPHICS, Release 2.0.*

## APL★PLUS PC, Release 6.0

One of the most exciting and anxiously awaited features in Release 6.0 is the ability to use variables larger than 64K.

In fact, with this latest release, variable size is limited only by the size of your workspace. As a result, you can now solve larger problems and manipulate more data—and still enjoy the same level of productivity and performance that you'd expect from the APL★PLUS PC System.

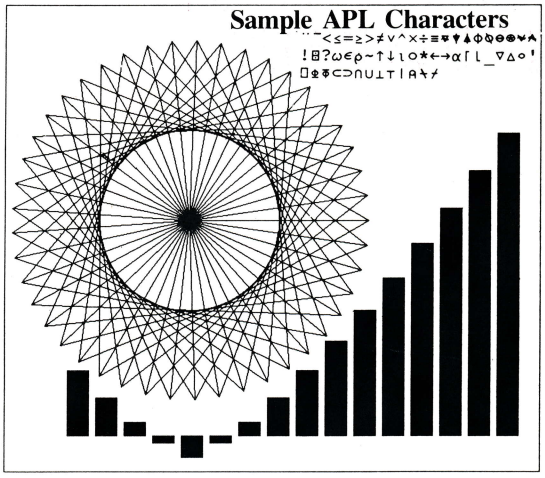
Highlights of some of the other features in Release 6.0 include:

- Support for the Hewlett-Packard Laser Jet+ printer, so you can now print a mixture of APL and ASCII characters in practically typeset quality.
- A pocket-sized *Quick Reference Guide* to quickly look up syntax and parameters for all the language and system features.
- Utility workspaces with special functions to perform complex number calculations, eigenvalues, and other advanced mathematical features.

The cost to update your APL★PLUS PC System from Release 5.0 to Release 6.0 is $125, and includes completely new, easier-to-use documentation, a system disk, and two utility disks.

STATGRAPHICS, Release 2.0, and APL★PLUS PC, Release 6.0 are both available immediately.

To order, call STSC at (800) 592-0050. In Maryland or Canada, call (301) 984-5123.




*An exciting new feature now available in APL★PLUS PC, Release 6.0 is LaserJet+ output.*

# MICROSPAN/PC AND APL SELF-STUDY TUTORIAL

If your company runs APL applications, chances are you have many users, ranging from the computer novice to the programming expert, who need varying levels of APL training.

STSC's APL Press offers two online APL courses that serve as an excellent follow-up and review for STSC's APL training seminars, or as stand-alone, self-paced tutorials.

The first, **MicroSPAN/PC** by MicroAPL, covers every aspect of APL, from keyboard layout to programming. The product functions as an interactive, electronic textbook, giving users the ability to skip backwards and forwards depending on their level of expertise.

MicroSPAN/PC features easy-to-understand explanations of APL operations, followed by examples for the user to execute, and finally, a test at the end of each chapter for review. Upon completion of this course, users should be able to produce their own functions and programs.

MicroSPAN/PC runs on an IBM PC, XT, AT, under STSC's APL★PLUS System for the PC. Cost for MicroSPAN/PC is $195, and includes four diskettes and an installation guide.

A second APL tutorial available from APL Press is the **APL Self-Study Course** by Kenneth E. Iverson. Cost for this self-study course is $50, and includes a textbook, *Introduction to APL*, a reference manual, *APL Language*, one diskette, and a pocket reference card.

Iverson's APL Self-Study Course introduces the fundamentals of APL and directs users to the course reference manual for formal definitions and further study. Included are supplementary exercises that provide practice in APL programming. The diskette contains workspaces for use with STSC's APL★PLUS System for the PC, as well as APL systems available from IBM and I.P. Sharp.

To order MicroSPAN/PC, the APL Self-Study Course, or for a complete catalog of APL Press publications, contact STSC, APL Press, 2115 East Jefferson St., Rockville, MD 20852.

PC PLUS★WARE NEWS

PC PLUS★WARE NEWS is published four times a year by STSC, Inc., and is distributed free of charge to registered licensees of the APL★PLUS PC System and STATGRAPHICS.

Comments regarding the newsletter should be sent to PC PLUS★WARE News, Editor, STSC, Inc., 2115 East Jefferson Street, Rockville, Maryland 20852.

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# APL PRESS FALL BOOK SALE

*Special Prices for STSC Customers Only!*

Enhance your productivity and skills with APL Press publications. For a limited time—**sale ends October 31**—you can get the following selected publications at special low prices.

To order, call toll-free (800) 592-0050, or (301) 984-5123 in Maryland or Canada. Or send in your order to APL Press, STSC, Inc., 2115 East Jefferson St., Rockville, Maryland 20852

| Publication | Regular Price | Sale Price |
|---|---|---|
| **Algebra: An Algorithmic Treatment,** Iverson. | $15.00 | $10.00 |
| **Solutions to Iverson's Algebra,** Iverson. | 3.50 | 2.00 |
| **Elementary Analysis,** Iverson. | 12.00 | 9.00 |
| **Calculus In A New Key,** Orth. | 15.00 | 10.00 |
| A four-book series in the central topics of mathematics. APL is used as exclusive mathematical notation throughout—in exposition, proofs, and exercises. Algorithmic treatment presents essentials of computer programming in mathematical light. | | |
| **APL And Insight,** Berry et al. Discusses use of APL to represent concepts in teaching. Includes examples drawn from physics and computer science, and discusses programming style appropriate to use in teaching. | 6.50 | 3.00 |
| **APL Blossom Time.** 45 rpm recording, Guest, Brown et al. Musical tribute to pioneers of APL. Side one features Jim Brown and company's rendition of APL Blossom Time in a professional studio recording. Side two offers original, historic performance by the APL Corral and a cast of hundreds at APL81. | 6.00 | 2.00 |
| **APL In Exposition,** Iverson. Illustrates use of APL in teaching algebra, coordinate geometry and statistics, finite differences and the calculus, logic, sets, electric circuits, and the computer. | 3.50 | 2.00 |
| **The Four Cube Problem,** McDonnell. Presents two variations of computer solutions to a cube puzzle. Illustrates how BASIC and APL give different shapes to our perceptions of how to solve problems. Provides complete, well-documented programs for both solutions as well as analysis of the differences between them. | 3.50 | 2.00 |
| **Introducing APL To Teachers,** Iverson. Presents introduction to APL for teachers of mathematics with material that shows how APL is relevant to their topic and students. | 2.50 | 1.00 |
| **Introduction To APL For Scientists and Engineers, Iverson.** Addressed to scientists or engineers and designed to exploit any previous acquaintance with the similar notation of vector algebra. | 2.50 | 1.00 |
| **Probability In APL,** Alvord. Uses APL to present mathematical aspects of probability theory. Contains exercises, answers, and appendices of program listings including those for a simple APL direct definition. Designed for classroom use or for anyone interested in solving problems involving combinations, permutations, binomial distributions, and other aspects of probability theory on an APL computer. | 17.50 | 14.00 |
| **Probability in APL Diskette.** Intended for use on an IBM PC with STSC's APL★PLUS PC System, IBM PC APL, or Sharp APL/PC. Contains two workspaces geared to the book. | 22.50 | 18.00 |
| **Starmap,** Berry & Thortensen. Provides a complete and concise statement, in APL functions, of a simple model of the solar system. Includes star tables so that readers can use the APL functions, dictionary or phrase book for APL. A tutorial article on APL idioms explains how to use the book and a synonym list helps understanding of APL expressions. | 5.00 | 2.50 |
| **Collected Whizbangs, Vol. 1,** Sykes. | 10.00 | 7.00 |
| **Collected Whizbangs, Vol. 2,** Sykes. | 10.00 | 7.00 |
| Two collections of APL programming techniques and tricks that illustrate the powerful features of the language. Serves as a handy reference tool or as a general tutorial on APL programming techniques. Ideal for new APL users to develop programming skills, as well as for experienced users who want to learn new tricks. | | |

**by Ralph Fox**
**Product Development Manager**

### Spreadsheet Borders

The major capabilities of STSC's new Spreadsheet Manager product are a powerful Lotus interface and a stand-alone spreadsheet very closely tied to the underlying APL environment. This article will explain how to incorporate a specific Lotus worksheet feature without losing the APL advantage.

The feature of interest is the ability to establish specific rows or columns as fixed borders that do not roll off of the screen as you scroll around the spreadsheet. The following function allows you to use either arbitrary character matrices or certain spreadsheet rows and columns as fixed top or left-side borders when invoking several of the Spreadsheet Manager commands. It can be readily extended to include bottom or right-side borders.

```
    ∇ R←BORDER RNG;A;B;CLS;CW;BDR;RWS;⎕IO
[1]  ⍝∇ charmat←BORDER range—Return
[2]  ⍝∇    image of spreadsheet area
[3]  ⍝∇    with borders.
[4]  ⍝∇ Assume top border is stored in
[5]  ⍝∇    a matrix global variable
[6]  ⍝∇    <SPtop>, whose shape is
[7]  ⍝∇       (NTR,NSC×CW)
[8]  ⍝∇    where NTR is the number of
[9]  ⍝∇    top rows, NSC the number
[10] ⍝∇    of spreadsheet columns, and
[11] ⍝∇    CW the cell width.
[12] ⍝∇ <SPtop> can be created from
[13] ⍝∇    spreadsheet text by a
[14] ⍝∇    formula like:
[15] ⍝∇       SPtop←IMAGE range
[16] ⍝∇ Also assume left border is
[17] ⍝∇    stored in a matrix global
[18] ⍝∇    variable <SPleft> that has
[19] ⍝∇    a row for every row in
[20] ⍝∇    the spreadsheet.
[21]
[22] ⍝   Use origin 1:
[23]    RNG←4⍴RNG+~⎕IO◇⎕IO←1
[24] ⍝   Start with character image:
[25]    R←IMAGE RNG
[26] ⍝   Get cell width:
[27]    CW←SPINFO[16]
[28] ⍝   Get rows and columns in range:
[29]    RWS←(RNG[1]-1)+⍳1+-/RNG[3 1]
[30]    CLS←(CW×RNG[2]-1)+⍳CW×1+-/RNG[4 2]
[31] ⍝   Append top border:
[32]    A←⍴BDR←SPtop[;CLS]
[33]    R←BDR⍪R
[34] ⍝   Append left border:
[35]    B←⍴BDR←SPleft[RWS;]
[36]    R←(((A[1],B[2])⍴' ')⍪BDR),R
[37] ⍝   Likewise for right and
[38] ⍝      bottom borders . . .
    ∇
```

To implement fixed borders for your spreadsheets, take these steps:

1. Copy the *BORDER* function into your working copy of the *SPMGR* workspace.
2. Edit the *SPCTRL* function to replace occurrences of the *IMAGE* function by the *BORDER* function. This means that for the Ctrl O option (Output a spreadsheet range to printer) and the Ctrl V option (View a spreadsheet on the screen without cell indices and status lines), you will obtain the spreadsheet range augmented with borders.
3. Either assign the required global variables *SPtop* and *SPleft* before invoking the spreadsheet editor, or wait until you have a spreadsheet active and obtain the top and left borders from existing rows and columns. As an example of the latter course of action, suppose you are running the population spreadsheet example illustrated in the user's guide. Since the sample spreadsheet has dimensions 32 by 6, you could move the cursor to the upper left cell, press Ctrl F, and enter the formula

```
SPtop←IMAGE 1 1 4 6 ◇ SPleft←JUSTIFY
    GETC 1 1 32 1 7
```

   to use two different techniques to create the fixed borders. The top border will contain rows 1 through 4, and the left border contains the first 7 characters of the first column.
4. Thereafter, whenever you tag a spreadsheet area and print it with Ctrl O or request an uncluttered view with Ctrl V, you will also have attached the portions of the top and left borders that correspond to the tagged range.
5. Likewise, whenever you use the *BORDER* function in a spreadsheet formula or the Ctrl 1 data display command, you will obtain the fixed borders.
6. You can subsequently modify the border global variables with the Ctrl 6 edit command. Alternatively, if you change the text in the spreadsheet rows and columns used as borders, if you change the cell width, or if you add or delete rows or columns, you should make sure the formula that assigns the border global is adjusted (if necessary) and re-executed.

**Can I Get APL★PLUS For Larger Computers?**

**Yes.** Because the same powerful and robust APL available on your PC is available on supermicros and minis running Unix, and on IBM mainframes running VM/CMS or MVS/TSO.

As more and more companies like yours recognize the vast gains in productivity available through APL, we welcome this opportunity to present APL at its best—the APL★PLUS UNX System, and the APL★PLUS Mainframe System! You get everything you get with APL★PLUS for the PC and more, like large workspaces, object sizes limited only by the amount of memory in your computer, a true shared file system, Nested Arrays, and a true APL compiler. Call or write now for more information.

STSC, Inc.
APL★PLUS Marketing
2115 East Jefferson Street
Rockville, Maryland 20852
**301-984-5112**

# STSC PLANS TWO-DAY SEMINAR ON USE OF APL AND GRAPHICS WITH STATISTICS

An exciting special seminar focusing on the use of APL and graphics to enhance your productivity with statistics will be offered October 29-30 at Princeton University in New Jersey.

The seminar, "Graphics and APL—Better Business Tools for Today's Decision-Makers," is part of STSC's ongoing Educational Services Program and co-sponsored by the Interactive Computer Graphics Laboratory of the School of Engineering of Princeton University.

Workshops and sessions planned for the "Graphics and APL" seminar will focus on:

- how graphics is used in science, engineering, and business.
- use of statistical data in a variety of financial, educational, and industrial environments.
- graphics and demographic data.

Participants in the seminar will have the opportunity to try out new techniques learned on the Interactive Computer Graphics Laboratory's state-of-the-art equipment.

Among the featured speakers at the two-day seminar is Neil Polhemus, Ph.D., creator of STATGRAPHICS, who will conduct a question/answer and problem-solving workshop on STATGRAPHICS.

Other speakers scheduled to lead workshop sessions include noted experts from STSC, Princeton University, the University of Virginia, Bell Labs, Atlas, Urban Decisions, and IBM.

The advance registration price of $295 includes all conference materials, lunches, refreshments, and dinner on the first day of the seminar. Registration at the door is $395.

Attendance is limited, so reserve your space in the "Graphics and APL" seminar right away. To register, call toll-free (800) 636-6660, or (212) 984-0730.

# CALL FOR APL87 PAPERS ON 'APL IN TRANSITION'

APL87 Conference organizers are soliciting papers from the APL community to be presented at the next conference, scheduled for May 11-15, 1986, in Dallas, Texas.

The theme of APL87 is "APL In Transition." While conference planners will consider papers dealing with any subject relating to APL, suggested topics relating to the conference theme include:

- APL as an application development system, addressing issues such as user interface, ease of development, and maintenance and efficiency in operation.
- APL and its environment—the interaction of APL and its host operating systems, other languages, and packages, and the use of APL in distributed processing or multiple CPU.
- Future developments in APL, including ISO standards, enhancements, nested arrays, and strategies to increase use of APL, particularly among beginning users.

Informal abstracts are due by September 15, 1986. Completed papers are due by November 1, with final copies of accepted papers due by April 20, 1987. For more information, contact Frank Cavallito, APL87 Program Chairman, 1812 Sherrye, Plano, TX 75074.

# PLUS★WARE PRODUCT TRAINING SCHEDULES

**APL Training**

| Rockville | New York City |
|---|---|
| September 22-25<br>APL★PLUS<br>Enhancements | September 8-11<br>Intermediate APL |
| | September 16<br>Pocket APL in One Day |
| October 20-23<br>APL for Systems Programmers | October 6-9<br>APL★PLUS<br>Enhancements |
| October 28-31<br>Structured Programming in APL | October 15<br>Pocket APL in One Day |
| | October 16-17<br>System Administrators |
| | October 29-30<br>Graphics & APL—<br>Conference<br>Princeton University,<br>Princeton, N.J. |
| November 10-13<br>Mathematical Application of APL | November 10-13<br>Structured Programming in APL |
| | November 17-20<br>APL for Systems Programmers |
| December 8-11<br>Introductory APL | December 1-4<br>Introductory APL |
| | December 8<br>Pocket APL in One Day |
| **Class Location**<br>2115 East Jefferson Street<br>Rockville, MD 20852<br>301-984-5000 | **Class Location**<br>122 East 42nd Street<br>Suite 1700<br>New York, NY 10168<br>212-984-0730 |

Fee for all APL classes is $800, which includes four days of training, all curriculum materials, lunch, and refreshments.

To register or for more information, call STSC at (800) 636-6660 for the Rockville classes, and (212) 984-0730 for the New York City classes.

**STATGRAPHICS Training**

**Princeton, NJ** October 27-29

Fee for the STATGRAPHICS seminar is $650, which includes three days of training. Seminar covers basic data structures, use of STATGRAPHICS expressions, using and defining function keys, and other procedures.

Discounts are available for companies sending more than one attendee. To register or for more information, contact Statistical Graphics Corporation at (609) 924-9374.

# STATGRAPHICS 2.0 OFFERS NEW GRAPHICS EDITING CAPABILITIES

Several new graphics editing enhancements have been added to STATGRAPHICS Release 2.0. These features represent the most popular enhancement requests that you have asked for, and include:

- a feature which allows you to enlarge a portion of your graph
- a method to enlarge or shrink labels on a graph (four sizes provided)
- a pop-up menu of graphics modification options that can be accessed easily from any graph.

In this article, we'll demonstrate graphics modification features. First, we'll produce a standard X-Y scatterplot using weights and mileage ratings from a sample data set on cars. Then, we'll modify the graph. Data for this example is included with Release 2.0 STATGRAPHICS systems.

1. Select the PLOT command, and enter *weight* as your X-axis variable and *mpg* as your Y-axis variable. Press F6 and the graph in Exhibit 1 will be displayed.

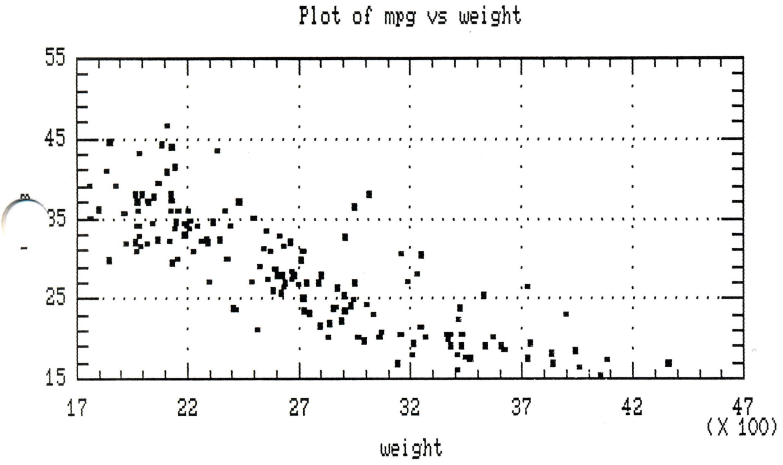



**Exhibit 1: Plot with Default Settings**

2. With the graph on your screen, press F2 to access the interactive labeling facility for graphs. A plus sign (+) will appear in the center of your screen to mark the position of the cursor.
3. First, we'll pick a portion of the plot to enlarge. Move the cursor to the top left corner of the window you want to see and press X to "mark" the location. We'll use the X-Y coordinates at (27, 35). Then, move the cursor to the bottom right corner of the window and press X again. We'll use the X-Y coordinates (39, 17). A box will appear on the plot enclosing the "window" you selected.
4. Now, press F6 to replot the window you selected. A new graph will be drawn on your screen. This graph is an enlarged portion of your previous plot.
5. Press F2 to activate the interactive labeling facility on the new plot. Move the cursor to the center of the top axis, and press F to "fetch" the top title. Then, press Z to increase the size of the title, and press P to place the title. The plot shown in Exhibit 2 will be displayed. (If the title runs off of the top of your screen because of the increased size, fetch it and reposition it.)

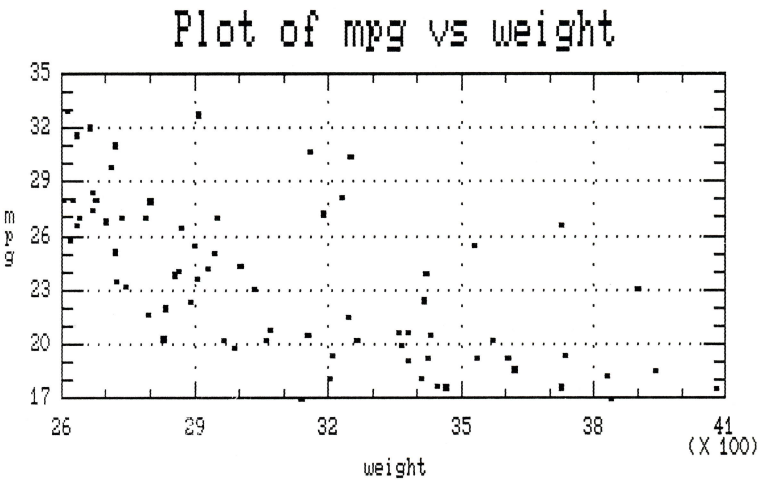



**Exhibit 2: Modified Plot**

6. Press Esc to turn off the interactive labeling facility.

This example illustrates only a few of the many graphics modification features available with STATGRAPHICS Release 2.0. The documentation included with the system gives many more examples to help you quickly produce plots to guide your analyses and prepare winning presentations.

# STSC AND I.P. SHARP SIGN AGREEMENT TOWARD FUTURE OF APL

STSC and I.P. Sharp Associates (IPSA) have signed an agreement for a long-term marketing and development association between the two companies.

Under terms of the agreement, STSC and IPSA will jointly develop a SHARP APL System for mid-sized machines based on STSC's current APL★PLUS UNX System. In addition, IPSA will market and resell STSC's APL★PLUS System for the PC under the SHARP APL name. STSC will also evaluate APL-based end-user products developed by IPSA for consideration under STSC's Software Publishing Program.

The joint development effort between STSC and IPSA on the new SHARP APL System for mid-sized machines will increase the availability of APL systems on mid-sized computers.

IPSA's agreement to resell and market STSC's APL★PLUS System for the PC will serve to expand the distribution channel for the product. In addition, STSC's agreement to evaluate IPSA end-user software for publishing will increase the visibility of APL as a successful application development tool.

The agreement is viewed by both companies as a major milestone toward strengthening the APL market worldwide. IPSA's successful development and marketing of APL-based business solutions and STSC's APL technology leadership across many environments and success as a micro software publisher has increased APL's popularity and value as an application development tool. The alliance of the two companies demonstrates their commitment to the future development of advanced APL technology and delivery of APL-based solutions.

# INDEPENDENT SOFTWARE CATALOG

This catalog provides a summary listing of application and utility software available from third-party developers. These products have not been tested by STSC and their inclusion in this catalog does not constitute an endorsement or recommendation by STSC.

**ACQMAN**

Designed to enable purchaser of capital assets to optimize means by which to finance them. Includes capability to compare lease vs. purchase, and to test unlimited number of different financial strategies. For IBM PC and compatibles. *Price: $5,000. Contact: A.J. Associates, 156 Keeler Drive, Ridgefield, CT 06877. (203) 797-8163.*

**APL2C Interface**

Allows APL programmers to compile, load, and execute 'C' programs from APL★PLUS PC System. Allows programs to run up to 10 times faster. Package includes 'C' compiler, library of 'C' routines to send and receive data to and from APL, and APL workspace which demonstrates the techniques used. *Price: $195. Contact: Lauer Software, 117 East Burgundy Lane, Newtown, PA 18940. (215) 860-9764.*

**APL★DBMS**

File creation and retrieval system. For IBM PC and compatibles. *Price: $40. Contact: INFO★PLUS, P.O. Box 91030, Johannesburg, South Africa 2006. (11) 726-8572.*

**APL★WORD**

Text editor and processor. Text processing performed with dot commands based on IBM's DCF. Handles APL text. For IBM PC and compatibles. *Price: $50. Contact: INFO★PLUS, P.O. Box 91030, Johannesburg, South Africa 2006. (11) 726-8572.*

**APL Function File**

Provides convenient storage and retrieval of unlocked APL functions in an APL★PLUS PC environment. For IBM PC and compatibles. *Price: $30. Contact: Donald Latour, 172 DuBois Avenue, Sea Cliff, NY 11579. (516) 671-6712.*

**Bible Tools**

Includes 29 Main Menu options for searching, printing bible verses, interweaving text notes, cycling form letters, preparing forms, color slides, overheads, address file maintenance, labels, typing letters, documents, and tables. For IBM PC, XT, AT and compatibles. *Price: $250. Contact: Symbiotics, 431 Mishler Road, Mogadore, OH 44260. (216) 699-4978.*

**CEICAM System**

Handles anticipated foreign currency funds flow system and foreign currency balance sheet exposure system for multinational corporations. For IBM PC, XT, AT and compatibles. *Price: $5,000. Contact: CEICAM Corporation, 360 East 55th Street, New York, NY 10022. (212) 752-5599.*

**CEO★MODEL**

A powerful financial planner. Different than a spreadsheet, CEO★MODEL is a finished model used for forecasting, budgeting, project analysis, corporate consolidations, and any other financial planning activity. For IBM PC and compatibles. *Price: $885. Contact: CEO Software Limited. 421 Eglinton Avenue West, Toronto, Ontario, Canada M4V 1Y1. (416) 484-0004.*

**Computer & Communications Industry Trade Press Indexing System**

Software and database of information on over 40 computer and communications industry trade press publications. Database contains citations to over 2,000 supplier indexes. Diskette of citation data delivered monthly. Support and supplier proficiency reports prepared from the database twice a year. For IBM PC and compatibles. *Price: $795. Contact: The Strategist, Inc., P.O. Box 81, Visalia, CA 93279. (209) 625-4598.*

**Corporate Consolidation Manager**

Menu-driven financial reporting system. Features automatic consolidation of four-dimensional, user-defined organizational structures, custom reporting, integrated color graphics, and data transfer from mainframe to PC and PC to PC. For IBM PC and compatibles. *Price: $1,500. Contact: LP Software, Inc., 400 Cross Keys Office Park, Fairport, NY 14450. (716) 223-1873.*

**General Ledger (GL-ON LINE)**

APL-based double entry set of books for small business, proprietorship, or corporation. Gives financial statements in IRS tax return format and detail trial balance. Menu-driven, runs on STSC's APL★PLUS PC. For IBM PC and compatibles. *Price: $50. Contact: Custom Computer Modeling, P.O. Box 434, Gloucester Pt., VA 23062. (804) 642-6864.*

**Lot Control for Inventory (LC-On Line)**

APL-based multiple warehouse inventory lot control system. Provides complete lot history and gains, printed reports and extensions. Menu-driven, runs on STSC's APL★PLUS PC. (APL code unprotected.) For IBM PC, XT and compatibles. *Price: $55, includes shipping and handling. Contact: Custom Computer Modeling, P.O. 434, Gloucester Pt., VA 23062. (804) 642-6864.*

**Master Medical Accounting System (MMAS)**

A sophisticated medical accounting software system that handles everything from the patient day-sheet to end-of-month patient statements. MMAS has a comprehensive security system to track daily activities. Sold separately or with a complete line of computer systems tailored to the software. For IBM PC, XT and compatibles. *Price: $695. Contact: Holistic Health Group, 1130 Coffee Road, Modesto, CA 95355. (209) 529-7950.*

**Note and Deed Discounter**

A sophisticated, easy-to-use software package that provides the profit-making edge when buying or selling notes, deeds of trust, and other credit instruments. For IBM PC and compatibles. *Price: $89.95. Contact: G & G Publishing, 1109 So. Plaza Way #312, Flagstaff, AZ 86002. (602) 774-1745.*

**OVERLAYS**

A machine language program callable by APL functions which packs together any number of APL objects (functions and/or variables) into a single APL variable (an overlay). Unpacking an overlay instantly redefines its constituent objects in the workspace. Overlays are a much more natural way of organizing data on files. Large applications no longer reside in many workspaces, but rather as components on files. Workspaces are no longer needed. For IBM PC and compatibles. *Price: $200. Contact: AMD Informatics, CP 1222, Haute Ville, Quebec, Canada G1R 5A7. (418) 687-9656.*

**PKTBIBLE**

Package consists of one program disk with help screens, and three bible text disks containing NT/KJV. The OT/KJV disks are optionally available at $10 each. For IBM PC, PCjr, and compatibles. *Price: $95. Contact: Symbiotics, 431 Mishler Road, Mogadore, OH 44260. (216) 699-4978.*

**Route Account Info System**

Integrated receivables, order entry, inventory and management accounting system. Unique features include: individual customer price quotes, automatic depletion of product, detailed billing statements, customer product and route profitability, and a wide variety of management reports. For IBM AT and compatibles. *Price: $150. Contact: Fleming Analytic, P.O. Box 202, Oak Forest, IL 60452. (312) 687-5774.*

**SAPL-Structured APL**

A preprocessor that makes structured control statements available to the APL programmer. Five figures are supported: If-Then-Else, Do-While, Do-Until, Case With Else, and iterative Do-Loop. For IBM PC. *Price: $34.95. Contact: PC-Ware, P.O. Box 3174, Dept. SS, Gaithersburg, MD 20878.*

**Screen-Ace Form Master**

The Screen-Ace Form Master is designed to create and maintain forms, tables, text screens and menus. It gives users the ability to deal with fields instead of forms management. For IBM, PC, XT, AT, or any fully compatible computer. *Price: $195. Contact: ACE Software Products, Inc., 6934 Petit Avenue, Van Nuys, CA 91406. (818) 989-5329.*

**SPC Courier**

A complete Statistical Process Control (SPC) package; X-Bar charts, R-charts, P-charts, NP-charts, U-charts, C-charts, histograms, frequency polygons, and pareto diagrams. For Commodore 128 computer. *Price: $59.95. Contact: Dynabyte, P.O. Box 2021, Michigan City, IN 46360. (219) 872-8701.*

**THERM: A Workspace for Thermal Modeling**

A general thermal network modeling tool that solves energy problems from simple heating load calculations to hour-by hour simulations. A unique applications package that reveals rather than conceals the physics and thermal modeling by using a combination of menus and editors built around basic thermodynamic relationships. Editors provide access to established libraries of data values. For IBM PC and compatibles. *Price: $650. Contact: ARC-SOFT, Inc., 501 Prince George Street, Williamsburg, VA 23185. (804) 220-0020.*

**UNITAB**

A spreadsheet-like full screen data entry and validation system with features to ease data entry and editing. The user determines size, location, colors, etc., of the spreadsheet through parameters. For IBM PC and compatibles. *Price: $195. Contact: UNIWARE, 15 Rue Erlanger, 75016 Paris, France.*

**Weibul Analyses of Life Data**

Provides printout of life data statistics based on a three-parameter Weibul distribution. Includes plotting programs to automatically create a high resolution plot on an HP7475A six-pen plotter or optionally to create a low resolution printer plot. For IBM PC, XT, AT and compatibles. *Price: $75. Contact: Symbiotics, 431 Mishler Road, Mogadore, OH 44260. (216) 699-4978.*

# NURSING STUDENTS USE APL-BASED SIMULATION SOFTWARE TO IMPROVE CLINICAL SKILLS

Third-year nursing students at Marist College School of Nursing, Poughkeepsie, New York, will be making life and death decisions—without jeopardizing real patients. The reason is a suite of computer simulations developed using STSC's APL★PLUS System for the PC, that are designed to improve the student's clinical skills.

This simulation software won first prize last year in STSC's Annual Application Story Contest. (See pages 5 to 8 for information and entry forms on this year's Application Story Contest.)

Marist chose STSC's APL★PLUS System for the PC over BASIC because it allowed development of the simulation program in a fraction of the time other languages would have taken. Also, modification of the program was easier and faster.

According to Barbara Hynes, Director of Nursing at Marist, "The power of the language, the quality of the software tools provided by STSC, and the HELP phone line support were all major considerations. We evaluated other computer-based learning products in other languages, but none had the range and flexibility we needed for a good simulation."

### Clinical Problems Replicated on Screen

A clinical simulation replicates a particular patient situation. The "scene" is established by describing the problem or problems the patient is experiencing. The APL★PLUS System was uniquely suited to the dynamic nature of the simulation. The student input is compressed over a matrix of function names, executing the appropriate sub-routine for each choice in turn. This eliminates the need to return to a list of choices and select still another choice to exit the simulation.

In one program for example, the patient is a newly diagnosed, 17-year-old diabetic. Prior to discharge of the patient, the nursing student will explore various categories of patient care: patient instruction, family instruction, psychological preparedness, home situation, social environment, and community resources.

These categories will determine whether the patient has psychologically accepted his diagnosis, has learned his diet, and knows the procedures for taking medicines. In addition, his family needs to receive training regarding his condition, his home situation has to be evaluated, and the social and community resources need to be explored and explained.

### Keywords Used To Categorize Responses

The system uses keywords to describe an area and the computer searches a lexicon of words and categorizes the response. For example, if the student enters "insulin" as a keyword, the program accepts it under the category "patient instruction." Mapping is handled by a matrix of keywords by category and is easily modified should a new keyword need to be added.

A particular naming convention was used for subroutines in order to collect a vector of functions "visited" by the student. At the end of the session, this vector is compared with the categories selected by the student and allows feedback in the form of which categories were explored and which ones were not.

Students have a time period in which to complete the simulated exercise. Each category the student engages in during the simulation is allocated a time factor. As the student completes a category, a clock appears on the screen and shows how much time was used and the amount of time remaining before a report has to be given. Each category causes its time factor to be deducted from the total time allotment, and if the total becomes zero, the student is taken out of the exercise with the appropriate explanation.

Graphics are often used to help students make decisions regarding spatial relationships (how the nurse should position herself to facilitate a good patient interview, or where a patient's home is in relation to community resources). The student is allowed to review the graphic screen as many times as necessary to make an informed choice.

### Score Computed By Matrix of Choices

The student receives scores for all categories and a total score with feedback at the end of the simulation. The rows of the score matrix are indexed by the choice and the columns are indexed by the number of times it has taken to get to the particular choice.

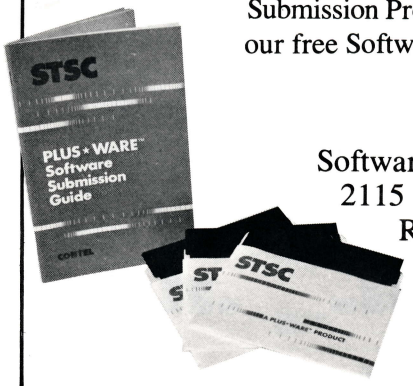
In addition to discharge planning simulations, simulations are provided for emergency room situations, the first five hours in intensive care, the first five days in intensive care, and usual hospitalization. By 1986, Hynes hopes to have 30 simulation programs finished. Eventually, videotapes of real medical cases may be added to enhance the reality of the simulations, as well as programs for dealing with terminally ill patients.

As the computer scripts have become more sophisticated, Marist has added hard disks, expanded graphics capabilities, increased memory, a Whitney Interface Board, a VCR, and an TV monitor. Because the material requires prolonged use of monitors, high-resolution screens are used to improve concentration and comprehension.

The potential impact of computer-aided simulation programs on nursing education is tremendous. Marist plans to evaluate its program to determine if knowledge is retained longer using simulation exercises as opposed to more traditional educational methods. Reliability and validity testing are also in progress on both nursing students and practicing nurses.


## ★★ Software Developers ★★

Turn your applications into profitable products! STSC is interested in evaluating third-party software for possible marketing opportunities. For more information on STSC's PLUS★WARE Software Submission Program, call or write for our free Software Submission Packet:




STSC, Inc.
Software Submissions Dept.
2115 East Jefferson Street
Rockville, MD 20852

301-984-5442

## Q & A

### STATGRAPHICS

**Q.** How can I get a printout of a STATGRAPHICS text screen without printing the status line?

**A.** With Release 2.0 it's easy! When your cursor is on the text screen you want to print, press the F4 key. A pop-up window allows you to select from two options:

PRINT TO PRINTER
PRINT TO FILE

Press the return key with the first option highlighted, and the text will be printed without the status lines.

If you select the PRINT TO FILE option, the screen will be stored in an ASCII file which is convenient for use with several word processing packages.

**Q.** How can I enter character data into a STATGRAPHICS variable?

**A.** There are two ways to accomplish this. The first is to use the Full-Screen Data Editor. Upon entering the spreadsheet-like panel of the editor, press the CTRL-DOWN arrow to highlight the Type field. Change the displayed N to a C, for character. Then return to the main portion of the editor by pressing the CTRL-UP arrow. You can now enter character data exactly as you want it to be placed in your variable.

To change the default variable name, press the CTRL-UP arrow to highlight the variable name. Then type the new name over that which is displayed. If your character data contains more than 10 characters per row, additional characters may be typed in the next editor column simply by changing the data type to C and the name to match the first column of the variable.

The second method, for shorter data sets, is to enter the character data in the Manipulate Define Variables procedure. When the "ENTER ASSIGNMENT:" prompt is displayed, enter

'R C RESHAPE 'DATA'

where R is the number of rows, C is the number of columns and DATA is the character data to be sorted in the variable. Remember to enter spaces appropriately so that the matrix will display each character name or entry on a different row.

### APL★PLUS System

**Q.** Does the APL★PLUS UNX System support the AT&T 3B2 hardware floating point processor?

**A.** As of version 3.0.3, the APL system has support for the 3B2 hardware floating point processor. If you have an earlier Release 3.0 system and want to upgrade, send your original disk to the Software Publishing Help Line and we will send you a free upgrade. If you have Release 2.0, contact your local dealer or your sales representative for information on upgrading your system.

**Q.** How can I get the APL characters on my screen without replacing my current character ROM and without losing any features?

**A.** ACCÈS Informatique has developed the Double ROM™, a low-cost solution for APL★PLUS PC users who wish to use the APL character ROM without losing the standard ASCII characters.

This small 2-1/4" x 3-1/2" card has sockets of the original character generator ROM on the video display card. It does not use an extension slot for itself, and is thin enough so as not to restrict use of the adjacent slot.

Price of the Double ROM is $49.95. For more information, please contact: Denis Samson, ACCÈS Informatique at (418) 688-9645.

PCPLUS★WARE™NEWS

STSC, Inc.
2115 East Jefferson Street
Rockville, Maryland 20852

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